a scan electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and arranged to grade-separately intersect with said strip portions of said address electrode belonging to said discharge cells;

a sustain electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and paired with said strip portions of said scan electrode; and

a dielectric substance covering at least one of said scan electrode and said sustain electrode, and

said driving unit applies a prescribed voltage to said strip portions of said address electrode in common, applies a prescribed voltage to each strip portion of said scan electrode, and applies a first voltage to one of said t strip portions of said sustain electrode belonging to a single discharge cell among said t discharge cells while applying a second voltage, which is different from said first voltage, to remaining all of said strip portions of said sustain electrode, for forming desired discharge only in said single discharge cell.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-11 are pending in the present application with Claims 1 and 3-10 having been amended by the present amendment.

In the outstanding Office Action, the drawings were objected to; the claims were objected to; Claims 6-8 were rejected under 35 U.S.C. § 112, first paragraph; Claims 1, 2 and 9-11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Applicants' admitted prior art (AAPA); and Claims 3-5 were indicated as allowable if rewritten in independent form.

Applicants thank the Examiner for the indication of allowable subject matter.

Regarding the objection to the drawings, the outstanding Office Action indicates the claimed features "t strip portions of an address electrode" and "t strip portions of a scan electrode" recited in Claims 1, 9 and 10, and "successfully selecting one of said strip portions of said scan electrodes paired with said strip portions supplied with said first voltage" recited in Claim 6, lines 6-8, must be shown or the features cancelled from the claims. Applicants note the "t strip portions of an address electrode" are shown in Figure 1, for example, as column electrodes W1 . . . Wm and the "t strip portions of a scan electrode" are shown as row electrodes X1 . . . Xn. Further, dependent Claim 6 has been amended to recite that the prescribed voltage is successively applied to one of said strip portions of said scan electrodes paired with said strip portions that is being supplied with said first voltage. This feature is supported in Figure 3, for example.

Further, Figures 10-13 are being labeled "Prior Art" as requested by the Examiner. A separate letter requesting approval of these drawing changes is being submitted to the draftsman. Accordingly, it is respectfully requested the objection to the drawings be withdrawn.

Regarding the objection to the claims, the appropriate claims have been amended in light of the comments noted in the outstanding Office Action and as shown in the marked-up copies. Accordingly, it is respectfully requested this objection also be withdrawn.

Regarding the rejection of Claims 6-8 under 35 U.S.C. § 112, first paragraph, Claim 6 has been amended as discussed above to recite the prescribed voltage is successively applied to one of said strip portions of said scan electrodes paired with said strip portions that is being supplied with said first voltage. In addition, the specification recites, for example at

page 17, line 16-18, that "an arbitrary one of the n row electrodes X1 to Xn is hereinafter also referred to as "row electrode Xi (i = 1 to n)." The specification further recites, for example at page 22, lines 20-22, that "a scan pulse Vax1 (voltage Vax1) is successively applied from the row electrode X1 to the row electrode Xn." From these recitations and a voltage waveform regarding the electrode Xi (i = 1 to n) as shown in Figures 2 and 3 for example, it is respectfully submitted one skilled in the art will understand the successive voltage applications as recited in Claim 6. Accordingly, it is respectfully requested this rejection be withdrawn.

Claims 1, 2 and 9-11 stand rejected under 35 U.S.C. § 103(a) as unpatentable over AAPA. This rejection is respectfully traversed.

Independent Claims 1 and 10 have been amended to recite that t strip portions of an address electrode are extended in a first direction and arranged in a second direction perpendicular to the first direction. Independent Claims 1 and 10 have also been amended to recite that the t strip portions are electrically connected in common. These amendments are supported in the specification, for example, at least at page 17, lines 19-23, page 34, lines 6-10 and page 19, lines 7-14, and Figures 1, 4, 7 and 8. Independent Claims 1 and 10 have further been amended to recite that a second voltage is different from a first voltage. This amendment is support in the specification, for example, at least at page 23, lines 7-13, page 24, line 1, page 29, lines 1-8 and page 32, 5-23, and Figures 2 and 3.

The outstanding Office Action indicates at page 6, lines 4-5 that all strip portions of the address electrode 108 in AAPA are integrated to form a single strip electrode, and further indicates at page 6, lines 13-16 a case where the first voltage = the second voltage = Vysc. However, such indication is not appropriate for amended Claims 1 and 10. That is, AAPA

does not teach or suggest the t strip portions of the address electrode satisfying both features, i.e., a feature that they are extended in the first direction and arranged in the second direction, and a feature that they are electrically connected in common. Accordingly, AAPA does not teach or suggest the claimed driving method and plasma display device regarding a PDP having such an address electrode.

Further, as recited at page 9, lines 10-16 of the specification, in the conventional plasma display device, as the number of the column electrodes is increased the number of driving circuits for supplying prescribed voltages to the column electrodes is also increased, resulting in an increase in cost for the plasma display device. The invention according to independent Claims 1 and 10 is directed to solve such a problem (please see the effect shown at page 30, lines 4-10).

Accordingly, it is respectfully submitted independent Claims 1 and 10 and each of the claims depending therefrom are allowable.

Regarding independent Claim 9, Applicants note AAPA does not teach or suggest the claimed discharge cells having discharge gaps capable of forming desired discharge, and the plurality of non-discharge cells having non-discharge gaps harder to form discharge than the discharge gaps arranged on a same plane and belonging to the address electrode and in which the t discharge cells are arranged on the same plane and arranged adjacently to each other through at least one non-discharge cell at least in a direction parallel to a display line. These features are shown in Figure 5, for example, in which discharge is generated in the gaps DG without causing discharge in the gaps NG. The discharge cells C and the non-discharge gaps NC are alternately arranged in directions parallel or perpendicular to display lines

respectively so that the discharge cells C are not directly adjacent to each other as shown in Figure 6, for example. AAPA does not teach or suggest these features.

Accordingly, it is respectfully submitted independent Claim 9 is also allowable.

Further, the outstanding Office Action's statement for reasons of allowance of Claims 3 and 5 is no longer appropriate because Claim 1 has been amended as discussed above.

The specification has also been amended to correct minor informalities. It is believed no new matter has been added.

Figure 8 is also being amended to show that the electrodes X1 to Xn as intersecting the electrode Wm. This amendment is supported in the specification at least at page 37, lines 17-18 and page 33, lines 10-11 and Figure 4 showing a schematic plan view of an AC-PDP 71. Applicants respectfully submit no new matter has been added. A separate letter requesting approval of this drawing change is being submitted to the draftsman.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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IN THE SPECIFICATION

Page 9, please replace the paragraph beginning at line 18 to page 10, line 6 as follows:

(1) According to a first aspect of the present invention, a method of driving an AC plasma display panel drives an AC plasma display panel comprising an address electrode including t (t: integer of at least 2) strip portions, t discharge cells belonging to the t strip portions respectively, a scan electrode including t strip portions belonging to the t discharge cells in one-to-one correspondence and arranged to grade-separately intersect with the strip portions of the address electrode, a sustain electrode including t strip portions belonging to the t discharge cells in one-to-one correspondence and paired with the strip portions of the scan electrode and a dielectric substance covering at least one of the scan electrode and the sustain electrode by applying a prescribed voltage to the strip portions of the address electrode in common, applying a prescribed voltage to each strip [potions] portion of the scan electrode and applying a first voltage to one of the t strip portions of the sustain electrode belonging to a single discharge cell among the t discharge cells while applying a second voltage to the remaining all of the strip portions of the sustain electrode for forming desired discharge only in the single discharge cell.

Page 10, please replace the paragraph beginning at line 22 to page 11, line 2 as follows:

(3) According to a third aspect of the present invention, a first potential difference between the strip portion of the sustain electrode supplied with the first voltage and the strip portion of the [sustain] scan electrode paired with the strip portion supplied with the first voltage is larger than a second potential difference between the strip portion of the sustain electrode supplied with the second voltage and the strip portion of the scan electrode paired with the strip portion supplied with the second voltage.

Page 13, please replace the paragraph beginning at line 24 to page 14, line 14 as follows:

(10) According to a tenth aspect of the present invention, a plasma display device comprises an AC plasma display panel and a driving unit for the AC plasma display panel, while the AC plasma display panel comprises an address electrode including t (t: integer of at least 2) strip portions, t discharge cells belonging to the t strip portions respectively, a scan electrode including t strip portions belonging to the t discharge cells in one-to-one correspondence and arranged to grade-separately intersect with the strip portions of the address electrode belonging to the discharge cells, a sustain electrode including t strip portions belonging to the t discharge cells in one-to-one correspondence and paired with the strip portions of the scan electrode and a dielectric substance covering at least one of the scan electrode and the sustain electrode, and the driving unit applies a prescribed voltage to the strip portions of the address electrode in common, applies a prescribed voltage to each strip [portions] portion of the scan electrode, and applies a first voltage to one of the t strip portions of the sustain electrode belonging to a single discharge cell among the t discharge cells while applying a second voltage to the remaining all of the strip portions of the sustain electrode for forming desired discharge only in the single discharge cell.

Page 38, please replace the paragraph beginning at line 25 to page 39, line 8 as follows:

According to the plasma display device 70, the driving methods according to the aforementioned embodiments 1 and 2 can be applied. In the AC-PDP 71 or 71A, the generic term for two column electrodes (three column electrodes in the AC-PDP 71A) connected in common among the column electrodes W1 to Wm corresponds to "address electrode", and each of the two (or three) column electrodes corresponds to "strip portion". The generic term for all row electrodes X1 to Xn corresponds to "scan electrode" while the generic term for all row electrodes Y1 to Yn corresponds to "sustain electrode", and each of the row electrodes X1 to Xn and Y1 to Yn corresponds to a strip [potion] portion of each electrode.

IN THE CLAIMS

--1. (Amended) A method of driving an AC plasma display panel, wherein said AC plasma display panel comprises:

an address electrode including t (t: integer of at least 2) strip portions, which are extended in a first direction and arranged in a second direction perpendicular to said first direction, and which are electrically connected in common;

t discharge cells belonging to said t strip portions respectively;

a scan electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and arranged to grade-separately intersect with said strip portions of said address electrode;

a sustain electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and paired with said strip portions of said scan electrode; and

a dielectric substance covering at least one of said scan electrode and said sustain electrode,

said method comprising applying a prescribed voltage to said strip portions of said address electrode in common, applying a prescribed voltage to each strip [potions] portion of said scan electrode, and applying a first voltage to one of said t strip portions of said sustain electrode belonging to a single discharge cell among said t discharge cells while applying a second voltage, which is different from said first voltage, to remaining all of said strip portions of said sustain electrode, for forming desired discharge only in said single discharge cell.

3. (Amended) The method of driving an AC plasma display panel according to claim 1, wherein

a first potential difference between said strip portion of said sustain electrode supplied with said first voltage and said strip portion of said [sustain] scan electrode paired with said strip portion supplied with said first voltage is larger than a second potential difference between said strip portion of said sustain electrode supplied with said second voltage and said strip portion of said scan electrode paired with said strip portion supplied with said second voltage.

4. (Amended) The method of driving an AC plasma display panel according to claim 3, wherein

[setting] said second potential difference is substantially [to] zero.

5. (Amended) The method of driving an AC plasma display panel according to claim l, wherein

[successively selecting] said first voltage is successively applied to one of said t strip portions of said sustain electrode [and applying said first voltage] while [applying] said second voltage is applied to remaining all of said strip portions of said sustain electrode in a period when said prescribed voltage is applied to said scan electrode.

6. (Amended) The method of driving an AC plasma display panel according to claim 1, wherein

said AC plasma display panel has a plurality of said scan electrodes and a plurality of said sustain electrodes respectively,

[said method,] in a period for applying said first voltage to each one of said t strip portions of each of said plurality of sustain electrodes in common, [successively selecting] said prescribed voltage is successively applied to one of said strip portions of said scan electrodes paired with said strip portions that are being supplied with said first voltage [and applying said prescribed voltage].

7. (Amended) The method of driving an AC plasma display panel according to claim 6, further comprising:

forming, after said period, first auxiliary discharge in said discharge cell to which said strip portion of said sustain electrode supplied with said second voltage in said period belongs between strip portions of said scan electrode and said address electrode.

8. (Amended) The method of driving an AC plasma display panel according to claim 6, further comprising:

forming, after said period, second auxiliary discharge in said discharge cell selected and supplied with said first voltage for forming said desired discharge in said period between strip portions of said scan electrode and said sustain electrode.

9. (Amended) An AC plasma display panel comprising:

an address electrode including t (t: integer of at least 2) strip portions;

t discharge cells, having discharge gaps capable of forming desired discharge, belonging to said t strip portions respectively;

a scan electrode including [of] t strip portions belonging to said t discharge cells in one-to-one correspondence and arranged to grade-separately intersect with said strip portions of said address electrode;

a sustain electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and paired with said strip portions of said scan electrode;

a dielectric substance covering at least one of said scan electrode and said sustain electrode; and

a plurality of non-discharge cells, having non-discharge gaps harder to form discharge than said discharge gaps, arranged on a same plane and belonging to said address electrode, wherein

said t discharge cells are arranged on said same plane and arranged adjacently to each other through at least one said non-discharge cell at least in a direction parallel to a display line,

said AC plasma display panel further comprising:

a plurality of barrier ribs separating said non-discharge cells from said discharge cells or said non-discharge cells at least along a direction intersecting with said display line, wherein

at least two adjacent ones of said strip portions of said address electrode are integrated with each other extending over said non-discharge cells and said discharge or non-discharge cells separated by said barrier ribs.

10. (Amended) A plasma display device comprising:

an AC plasma display panel; and

a driving unit for said AC plasma display panel, wherein

said AC plasma display panel comprises:

an address electrode including t (t: integer of at least 2) strip portions, which are extended in a first direction and arranged in a second direction perpendicular to said first direction, and which are connected to an output terminal of said driving unit in common;

t discharge cells belonging to said t strip portions respectively;

a scan electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and arranged to grade-separately intersect with said strip portions of said address electrode belonging to said discharge cells;

a sustain electrode including t strip portions belonging to said t discharge cells in one-to-one correspondence and paired with said strip portions of said scan electrode; and

a dielectric substance covering at least one of said scan electrode and said sustain electrode, and

said driving unit applies a prescribed voltage to said strip portions of said address electrode in common, applies a prescribed voltage to each strip [portions] portion of said scan electrode, and applies a first voltage to one of said t strip portions of said sustain electrode belonging to a single discharge cell among said t discharge cells while applying a second

voltage, which is different from said first voltage, to remaining all of said strip portions of said sustain electrode, for forming desired discharge only in said single discharge cell.--